AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1.   (Original) A method for enhancing a trail/path protection function in a SDH/SONET network, the network comprising a number of working resources and a number of protection resources and transmitting signal frames having a section overhead in SDH technology, or a Line OverHead in SONET technology, and a POH,

said protection function comprising linear MSP N:1 trail protection function based on transmission of protection information through K1 and K2 bytes of Section OverHead in SDH or Line OverHead in SONET, wherein the method further comprises the step of mapping the content of said K1 and K2 bytes by protocol exchange into POH bytes of the path overhead in SDH or SONET, at Low Order and/or High Order level, so as to allow the handling of more than one protecting resource shared among different working resources, both in end-to-end handling and in intermediate handling.

2.   (Original) A method according to claim 1, wherein the step of mapping the content of said K1 and K2 bytes into POH bytes comprises mapping into K3 byte at high order level and into K4 byte at low order level for SDH technology.

3.   (Original) A method according to claim 1, wherein the step of mapping the content of said K1 and K2 bytes into POH bytes comprises mapping into Z4 byte at high order level and into Z7 byte at low order level for SONET technology.

4.   (Currently Amended) A method according to claim 2 ~~or 3~~, wherein the step of mapping the content of said K1 and K2 bytes into POH bytes comprises providing a four-bit based multiframe.

5.   (Currently Amended) A method according to claim 2 ~~or 3~~, wherein the step of mapping the content of said K1 and K2 bytes into POH bytes comprises providing a two-bit based multiframe.

6.   (Original) A method according to claim 1 wherein, in case of failure of one of the working resources, a check step is performed for checking whether at least one of the protection resources is available, namely in the idle state.

7.   (Original) A method according to claim 6, wherein the check step is performed by assigning a number to each one of the protection resources and scanning, either in increasing or in decreasing order, the protection resources.

8.   (Original) A method according to claim 6, wherein, in case of positive check, switch criterion is taken into account by APS controller as a valid input, a consistent Bridge Request is issued and actions required by the new switch criterion are performed by using the available protection resource, regardless the priority level of Bridge Requests already served.

9.   (Original) A method according to claim 6, wherein, in case of negative check, the priority level of Bridge Requests currently served is checked and compared with priority of the new switch criterion.

10.   (Original) A method according to claim 9, wherein if the priority of new switch criterion is higher than at least one of the Bridge Requests currently served, then, the lowest priority request is pre-empted by the request associated to the new switch criterion and the actions required are performed by using the protection resource previously used by pre-empted Bridge Request.

11.   (Original) A method according to claim 9, wherein if the priority of new switch criterion is lower than or equal to Bridge Requests currently served, then, the new switch criterion is not considered as a valid input for APS controller and not signalled through protocol bytes; if new switch criterion is a command, it is dropped, namely it is not kept in pending status.

12.   (Original) A method according to claim 6, wherein, when more switch initiation criteria are simultaneously detected, the highest priority level request will be served as first; if the switch initiation criteria are at the same priority level it is proposed that the one referring to the lowest Traffic Number will be served first.

13.   (Original) A method according to claim 6, wherein, when more Signal Failure / Signal Degrade conditions are present within a protection group and not served, due to the lack of available protection resources, the highest priority condition is served first as soon as one protection resource becomes available.

14.   (Original) A method according to any of claims 6, wherein, when more protecting resources are in a Wait Time to Restore condition and no other protection resource is available, a new Bridge Request, will override WTR state on the protection resource having lowest, or highest, number.

15.   (Original) A network element for a SDH or SONET network comprising at least two network elements and wherein an enhanced trail/path protection function is implemented, the network comprising a number of working resources and a number of protection resources and transmitting signal frames having a section overhead in SDH technology, or a Line OverHead in SONET technology, and a POH, said protection function comprising linear MSP N:1 trail protection function based on transmission of protection information through K1 and K2 bytes of

Section OverHead in SDH or Line OverHead in SONET, wherein it comprises a device for

mapping or de-mapping the content of said K1 and K2 bytes by protocol exchange into POH

bytes of the path overhead in SDH or SONET, at Low Order and/or High Order level, so as to

allow the handling of more than one protecting resource shared among different working

resources, both in end-to-end handling and in intermediate handling.

16.   (Original) A network element according to claim 15, wherein said device for

mapping or de-mapping is capable of mapping or demapping, respectively, a four-bits based

multiframe whose payload comprises the first four bits of byte K1, the second four bits of byte

K1 and the first four bits of byte K2.

17.   (Original) A network element according to claim 15, wherein said device for

mapping or de-mapping is capable of mapping or demapping, respectively, a two-bits based

multiframe whose payload comprises the first two bits of byte K1, the second two bits of byte

K1, the third two bits of byte K1, the forth two bits of byte K1, the first two bits of byte K2 and

the second two bits of byte K2.

18.   (Original) A computer program comprising computer program means adapted to

perform the method according to claim 1 when said program is run on a computer.

19.   (Original) A computer readable medium having a program recorded thereon, said computer readable medium comprising computer program code means adapted to perform the method according to claim 1 when said program is run on a computer.